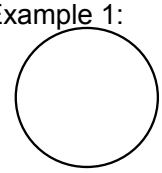
11-5 Areas Circles and Sectors

Area of a circle= $\pi r^2$

Example 1:



r = 4 cm

$A = 16\pi$ cm² exact

50.3 cm² approx.

Example 2:

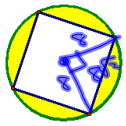
The area of a circle = 390.1cm².
What is the radius?

$390.1 = \pi r^2$

$11.1_{cm} = r$

Example 3:

A square is inscribed in a circle.
Find the area of the shaded region.
The radius is 8 cm.



$A_{circle} - A_{sq}$

$64\pi - (8\sqrt{2})^2$

$(64\pi - 128)$ cm

$\approx 73.1$ cm²

Example 4:

Find the area of the shaded region.
One side of the equilateral triangle is $8\sqrt{3}$ cm.

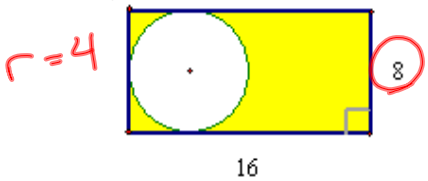
$A_c - A_\triangle$

$64\pi - \frac{(8\sqrt{3})^2\sqrt{3}}{4}$

117.9 cm²

Example 5:

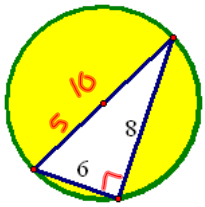
Find the area of the shaded region.




$(16 \cdot 8) - 16\pi$

77.7 u²

Example 6:
Find the area of the shaded region.

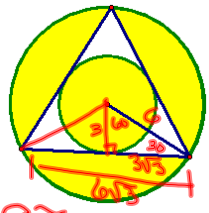



$25\pi - \frac{1}{2}8\cdot 6$

$54.5\ u^2$

Example 7:
Find the area of the shaded region.

r = 6cm

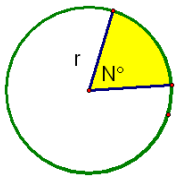



$Lg\,C. - \triangle + Sm\,C.$

$36\pi - \frac{(6\sqrt{3})^2\sqrt{3}}{4} + 9\pi$

$2\sqrt{3}$

$94.6\ cm^2$



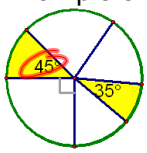

Area of Sector

$$A = \frac{N}{360}\pi r^2$$

$$\frac{area\_sector}{\pi r^2} = \frac{m\_\overset{\frown}{arc}}{360}$$

Example 8: Find the area of each sector.

d = 18 in




$\frac{45}{360}\pi 81$

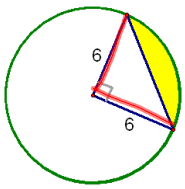
$\frac{81\pi}{8}$

$\approx 31.8\ in^2$

$\frac{35}{360}\ 81\pi$

$24.7\ in^2$

Example 9:
Find the area of the segment.




$A_{sector} - A_{\triangle}$

$\frac{90}{360}\ 36\pi - \frac{1}{2}6\cdot 6$

$10.3\ u^2$

HW p758-759
#s 3, 4, 7, 11, 12, 17, 26, 28-31